

## **REMARKS**

Claims 20-39 are all of the pending claims, with claims 20 and 38 being written in independent form. By virtue of this Amendment, Applicants add new claims 37-39.

The Examiner rejects claims 20, 27, 28 and 31 under 35 USC §102(b) as being anticipated by 5,220,733 to Bothe et al. (“Bothe”); and claims 21-26, 29 and 30 under 35 USC §103(a) as being obvious over Bothe in view of US 4,050,900 to Hobbs et al. (“Hobbs”). Applicants respectfully traverse these rejections in view of the following remarks.

### **I. Independent Claim 20:**

Independent claim 20 is directed to a method for treating a material using thermal radiation having two separate and distinct wavelength features. Specifically, the thermal radiation:

- (1) is concentrated to one or more wavelength ranges at which water has peaks for absorption of radiation energy, and
- (2) has wavelengths that are shorter than the openings of the surface structure of the material being treated.

By virtue of these features, the claimed invention may achieve relatively short drying times, relatively low energy consumption, and relatively low negative influence on the material being treated.<sup>1</sup> At least these features (as recited in independent claim 20), in combination with the other features recited in independent claim 20, are not taught or suggested by the prior art relied upon by the Examiner.

To be an “*anticipation*” rejection under 35 USC §102, the reference must teach each and every element and feature of Applicants’ claims. Rejections under 35 USC §102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus, the reference must clearly and unequivocally disclose each and every element and feature of the claimed invention.

In the situation at hand, Bothe fails to teach each and every element and feature required by independent claim 20. With reference to Figs. 5A and 5B of Bothe, the disclosed drying

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<sup>1</sup> Spec., p. 3, lines 6-13.

apparatus includes a fire box 64 with burners 24 that heat a radiant plate 66.<sup>2</sup> The radiant plate 66 emits thermal radiation to dry material passing through auger banks 54, 56, 58. However, Bothe merely indicates that the material is exposed to “high intensity infrared flux” from the radiant plate 66.<sup>3</sup> This disclosure is far too broad to teach or suggest the specific wavelength features of the claimed invention. Indeed, the brief disclosure provides no indication that the wavelengths are concentrated to ranges at which water has peaks of absorption, or that the wavelengths are shorter than the openings of the surface structure of the material being treated. The Examiner’s allegations to the contrary seem to be based in large part upon inappropriate speculation.

Turning to the next point, the Examiner indicates (albeit with respect to the obviousness rejection) that Bothe would “perform the invention as claimed regardless of the claimed wavelength or material.”<sup>4</sup> This is simply not understood. As noted above, independent claim 20 recites specific wavelength features, including one that is defined with respect to the material being treated. And for argument sake, even if Bothe’s device could perform the claimed method, the rejection position would still be incorrect because alleged capabilities (without more) are not sufficient to establish anticipation or a *prima facie* case of obviousness. In this regard, Applicants respectfully request clarification.

As demonstrated above, claim 20 recites features that are not taught or suggested by Bothe. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the raised anticipation rejection.

## **II. Dependent Claims 27, 28, and 31:**

Dependent claims 27, 28 and 31 are believed to be patentable by virtue of their dependencies from claim 20, and because of the features respectively recited therein. For example, claim 27 recites that the material is received on “a conveyor belt inside the chamber,” and claim 28 recites that the material is received on “one or more carriages.” Bothe is not

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<sup>2</sup> Bothe, col. 6, lines 54+.

<sup>3</sup> Bothe, col. 6, lines 27-30 and 54-57.

<sup>4</sup> Office Action, p. 3, lines 2-4.

relevant because (as shown in Fig. 2 of the reference), the disclosed material handling system includes, a tank 34, displacement pumps 36, a pipe 38, a distribution cone 42, input lines 46 and auger banks 52, 54, 56. But it does not include a conveyor belt or a carriage.

Furthermore, Bothe makes no mention that the disclosed method is used as part of an ecological system of recycling, as recited in claim 30.

### **III. Independent Claim 38:**

Independent claim 38 is also directed to a method for treating a material using thermal radiation. According to claim 38, the thermal radiation:

- (1) has a relatively greater intensity in at least one wavelength range for which water has an absorption coefficient greater than  $1,000\text{ cm}^{-1}$ ,
- (2) has a relatively lesser intensity at wavelengths outside of said at least one wavelength range, and
- (3) has wavelengths that are shorter than the openings of the surface structure of the material.

Example, non-limiting embodiments of these features are discussed throughout the specification.<sup>5</sup>

Bothe is not believed to be relevant for reasons analogous to those noted above with respect to claim 29. Specifically, Bothe merely indicates that the material is exposed to “high intensity infrared flux” from the radiant plate 66. And this disclosure is far too broad to teach or suggest the specific wavelength features of the claimed invention.

### **CONCLUSION**

For at least the reasons discussed above, Applicants earnestly solicit reconsideration and allowance of all of the pending claims.


Pursuant to 37 CFR §§ 1.17 and 1.136(a), Applicants petition for a one (1) month extension of time for filing a reply to the Office Action and concurrently submit the required extension fee.

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<sup>5</sup> See p. 8, lines 1-20, for example.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-4446 for any additional fees required under 37 CFR § 1.16 or under 37 CFR § 1.17; particularly, extension of time fees.

Respectfully submitted,

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